

REMARKS

In the Office Action the Examiner noted that claims 1-36 are pending in the application, and the Examiner rejected all claims. The Examiner's rejections are traversed below, and reconsideration of all rejected claims is respectfully requested.

Claim Rejections Under 35 USC §102

On pages 2-4 of the Office Action the Examiner rejected claims 1-4 and 15-24 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,623,092, issued to Kim et al. (hereinafter referred to as "Kim"). On pages 4-5 of the Office Action the Examiner rejected claims 1, 15-16, and 36 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2002/0012033, issued to Iwanaga et al. (hereinafter referred to as "Iwanaga"). These rejections are respectfully traversed by the Applicants.

As these §102 rejections are the same as those made in the previous Office Action, the Applicants will address and traverse the rejections below in the comments submitted regarding the Examiner's response to the Applicants' arguments.

Claim Rejections Under 35 USC §103

On pages 5-7 of the Office Action the Examiner rejected claims 5-14 and 25-35 under 35 U.S.C. §103(a) as being unpatentable over Kim in view of U.S. Patent No. 6,234,615, issued to Tsukuda (hereinafter referred to as "Tsukuda"), and further in view of U.S. Patent No. 6,682,183, issued to Jones et al. (hereinafter referred to as "Jones"). These rejections are respectfully traversed by the Applicants.

As these §103 rejections are the same as those made in the previous Office Action, the Applicants will address and traverse the rejections below in the comments submitted regarding the Examiner's response to the Applicants' arguments.

Examiner's Response to Applicant's Arguments

On page 7 of the Office Action the Examiner responded to the arguments filed by the Applicants on July 5, 2005, in regard to the Office Action mailed on April 5, 2004. The

Applicants will now respectfully respond to the Examiner's response on a point-by-point basis.

Kim

The Examiner states that the Applicants argue "that Kim does not suggest the claimed first volume because the ink contact surface of the sponge 122 does not contact the bottom of the ink cartridge 100." The Examiner goes on to state that "[t]he argument is not persuasive because there is nothing recited in the rejected claims about the contact between the surface of the sponge and the bottom of the ink cartridge."

The Applicants respectfully submit that the Examiner has misinterpreted the Applicants' arguments regarding the disclosure of Kim. The text of the arguments referred to by the Examiner was submitted as follows:

This is in direct contrast to the ink cartridge 100 disclosed in Kim, which defines no such first volume. While the Examiner lists the four recited faces of claim 1 of the present application while discussing the ink cartridge of Kim, the Applicants respectfully point out that the first volume identified by the Examiner is not actually defined as discussed by the Examiner. To wit, the ink contact surface of the sponge 122 adjacent to the clearance 112 in Figure 3 of Kim apparently does not contact the bottom of the ink cartridge 100, and therefore there is no first volume as defined in the recitation of claim 1 of the present application. Rather, the volume shown in Figure 3 of Kim, which is discussed by the Examiner as being defined by the four sides recited in claim 1 of the present application, is actually apparently bound by seven surfaces. These would include the four discussed by the Examiner, plus the outer portion of the ink supply pipe 132 facing the second chamber 160, a bottom surface of the filter 130, and a side surface of the filter 130 facing the second chamber 160. Therefore, the volume shown in Figure 3 of Kim, which begins at the rightmost point at a vertical plane extending vertically from a center plane of the intermediate partition 110, is apparently bound by at least six other surfaces, rather than the first volume bound by four surfaces recited in claim 1 of the present application.

As the preceding text shows, the Applicants are not arguing that Kim does not suggest the claimed first volume "because the ink contact surface of the sponge 122 does not contact the bottom of the ink cartridge 100." Rather, the Applicants are arguing that the first volume as recited in claim 1 of the present application is not disclosed in Kim.

The first volume recited in claim 1 of the present application, which is larger than the recited second volume, is "defined by a first face forming an ink contact surface of the negative pressure generating medium adjacent the connection hole, a second face forming a bottom surface of the intermediate partition in the connecting hole, a third face forming a bottom of the ink cartridge, and a first vertical plane extending vertically from a center plane of the intermediate partition." The word "define" means to determine or fix the boundaries or extent. The Random

House Dictionary of the English Language, 523 (2nd et. 1987). Therefore, the recited three faces and one plane, which define the first volume, would by definition meet one another, thereby defining the recited first volume. While the Examiner has identified three faces and one plane in Kim, the identified faces and plane do not all meet one another, and therefore do not define a first volume as recited in claim 1 of the present application. To wit, the Examiner identifies “a first face forming an ink contact surface of the negative pressure generating medium (122) adjacent to the connection hole, a second face forming a bottom surface of the intermediate partition in the connecting hole, a third face forming a bottom of the ink cartridge (100), and a first vertical plane extending vertically from a center plane of the intermediate partition.” However, as pointed out in the previous Amendment, the sponge 122 does not meet the bottom of the ink cartridge 100, and therefore no first volume is defined as recited in claim 1 of the present application. The Applicants respectfully submit that if these three faces and one plane identified by the Examiner do not form a closed surface, then no first volume is defined at all. Any similar volume identified by the Examiner would necessarily have at a minimum two additional faces, namely the outer portion of the ink supply pipe 132 facing the second chamber 160, and a surface of the filter 130 facing the second chamber 160 and the sponge 122 (Figure 3), and therefore would not be defined by the three faces and one plane recited in claim 1 of the present application.

In other words, there is no first volume defined by the identified faces and plane in Kim which discloses the first volume recited in claim 1 of the present application. Claim 1 recites the first volume as being defined by the specific three faces and one plane, and MPEP 2111.01(II) states that “[c]laim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art.” The Applicants respectfully submit that those of ordinary skill in the art would recognize that the three faces and one plane recited in claim 1 would have to meet in order to define the first volume. Kim apparently does not disclose at least this feature of claim 1 of the present application.

To reiterate, the Applicants do not argue that “Kim does not suggest the claimed first volume because the ink contact surface of the sponge 122 does not contact the bottom of the ink cartridge 100.” Rather, the Applicants respectfully submit that Kim does not disclose the first volume as defined in claim 1 of the present application, which is the proper test for a §102 rejection. It appears that the Examiner has understood the evidence provided by the Applicants, which shows that Kim does not disclose the recited features of claim 1 of the present application, as being submitted as subject matter of claim 1 itself, but the Applicants respectfully submit that this is not a proper reading of the arguments.

Therefore, Kim does not disclose at least the feature of a “a first volume being defined by a first face forming an ink contact surface of the negative pressure generating medium adjacent the connection hole, a second face forming a bottom surface of the intermediate partition in the connecting hole, a third face forming a bottom of the ink cartridge, and a first vertical plane extending vertically from a center plane of the intermediate partition.” Accordingly, Kim does not disclose every element of the Applicants' claim 1. In order for a reference to anticipate a claim, the reference must teach each and every element of the claim (MPEP §2131). Therefore, since Kim does not disclose the features recited in independent claim 1, as stated above, it is respectfully submitted that claim 1 patentably distinguishes over Kim, and withdrawal of the §102(e) rejection is earnestly and respectfully solicited.

Further, the Examiner states that “since the ink cartridge of Kim has the structure similar to the structure of the claimed cartridge, the first volume of Kim must anticipate the claimed first volume.” The Applicants respectfully submit that the fact that Kim and the present application disclose ink cartridges of a “similar” structure does not in any way indicate that the first volume of Kim “must” anticipate the claimed first volume. The Applicants also respectfully submit that the very fact that the Examiner has stated that the ink cartridges are “similar” necessarily indicates that there are intrinsic differences between the ink cartridges. Therefore, if there are any differences whatsoever between the ink cartridges, it is not a logical conclusion that a first volume of the ink cartridge of Kim “must” anticipate the recited first volume of claim 1 of the present application.

Claims 2-4 depend from claim 1 and include all of the features of that claim plus additional features which are not taught or suggested by Kim. Therefore, it is respectfully submitted that claims 2-4 also patentably distinguish over Kim.

The Examiner has not identified the recited elements of claim 15 of the present application in either the previous Office Action or the current Office Action. Nevertheless, the Applicants will address at least some of the differences between Kim and claim 15.

Claim 15 of the present application recites “a first volume with an area bounded by a vertical plane extending from a center of a bottom surface of the partition, the bottom surface of the partition on the medium chamber side, a surface of the medium, an exposed portion of a surface of the partition on the medium chamber side, and a base of the ink cartridge on the medium chamber side.” Similar to the word “defined” used in claim 1, the word “bounded” in claim 15 means having bounds or limits. The Random House Dictionary of the English Language, 247 (2nd et. 1987). Therefore, the first volume recited in claim 15 of the present

application is bounded by the precise surfaces and plane recited in claim 15. As discussed in relation to claim 1 of the present application, Figure 3 of Kim apparently shows that the surface of the sponge 122 does not contact the bottom of the ink cartridge 100, and thus defines a volume having at the very least six surfaces, and therefore there is no first volume disclosed in Kim as is defined in claim 15 of the present application. Therefore, it is also respectfully submitted that claim 15 patentably distinguishes over Kim, and withdrawal of the §102(e) rejection is earnestly and respectfully solicited.

Claims 16-24 depend from claim 15 and include all of the features of that claim plus additional features which are not taught or suggested by Kim. Therefore, it is respectfully submitted that claims 16-24 also patentably distinguish over Kim.

Iwanaga

The Examiner states that the Applicants argue "that Iwanaga et al does not suggest the claimed first volume because the partition wall (38) extends all the way to the bottom of the cartridge and the absorber (32) is flush against the inner surface of the partition wall (38) and the first volume is not larger than the second volume." The Examiner goes on to state that "[t]he arguments are not persuasive because there is nothing recited in the rejected claims about the contact between the surface of the sponge and the extension of the partition wall."

The Applicants respectfully submit that the Examiner has misinterpreted the Applicants' arguments regarding the disclosure of Iwanaga. The text of the arguments referred to by the Examiner was submitted as follows:

As discussed previously in regard to claim 1 of the present application, claim 1 recites one boundary defining the first volume as "a third face forming a bottom of the ink cartridge." This is in direct contrast to the liquid storing container disclosed in Iwanaga. The Examiner cites Figures 4A-4B, 7B, and 9B-11 of Iwanaga as disclosing the features recited in claim 1 of the present application. However, there is no first volume as recited in claim 1 disclosed in any of these figures. To wit, Figures 4A and 4B both clearly show that there is no volume whatsoever formed having the bottom of the ink cartridge as a surface thereof. The partition wall 38 extends all the way to the bottom of the ink cartridge in each of the Figures of Iwanaga, and the fiber absorber 32 is flush against the inner surface of the partition wall 38 as well as the bottom of the ink cartridge. Therefore, no volume whatsoever is formed between the fiber absorber 32 and the bottom of the ink cartridge in the vicinity of the communicating hole 40, and especially not the first volume as recited in claim 1 of the present application. Further, claim 1 also states that the first volume being larger than the second volume prevents "the connecting hole from being blocked with the negative pressure generating medium expanding." It is clearly shown in the Figures of Iwanaga that the fiber absorber is indeed expanding to block portions of the communicating hole 40.

As the preceding text shows, the Applicants are not arguing that Iwanaga does not suggest the claimed first volume “because the partition wall (38) extends all the way to the bottom of the cartridge and the absorber (32) is flush against the inner surface of the partition wall (38).” Rather, the Applicants are arguing that the first volume as recited in claim 1 of the present application is not disclosed in Iwanaga.

The first volume recited in claim 1 of the present application, which is larger than the recited second volume, is “defined by a first face forming an ink contact surface of the negative pressure generating medium adjacent the connection hole, a second face forming a bottom surface of the intermediate partition in the connecting hole, a third face forming a bottom of the ink cartridge, and a first vertical plane extending vertically from a center plane of the intermediate partition.” Therefore, there must be at least some area between the recited “second face forming a bottom surface of the intermediate partition in the connecting hole” and the “third face forming a bottom of the ink cartridge.” These are the recited elements the Applicants were addressing in the arguments. Ergo, the Applicants were not claiming that the present application recited the extension of the partition wall or the contact of the sponge, but rather that Iwanaga does not disclose the recited elements of claim 1 of the present application. And it is apparent that these recited elements are not recited in Iwanaga.

To wit, the bottom of the partition wall 38 is flush with the bottom of the ink cartridge in Iwanaga. Therefore, there can be no volume between the “second face forming a bottom surface of the intermediate portion in the connecting hole” and the “third face forming a bottom of the ink cartridge,” as recited in claim 1 of the present application. Further, because the fiber absorber 32 is flush with the surface of the partition wall 38 and the bottom of the ink cartridge, there is no volume between the “first face forming an ink contact surface of the negative pressure generating medium adjacent to the connection hole” and the “third face forming a bottom of the ink cartridge,” as recited in claim 1 of the present application.

Also, even if the partition wall 38 did not extend all the way to the bottom of the ink cartridge, it is apparent from the Figures of Iwanaga that the fiber absorber 32 extends into the communicating hole 40, and therefore there is no first volume that is larger than the second volume as recited in claim 1 of the present application. In fact, as seen from the Figures of Iwanaga, the second volume is inherently larger than the first volume, due to the fact that the fiber absorber 32 partially extends into the “first volume” identified by the Examiner. The Applicants respectfully submit that the Examiner has not identified any such first volume that is larger than the second volume as recited in claim 1. The Examiner even states that Iwanaga

prevents “the connecting hole (40) from being blocked with the negative pressure generating medium (32),” when it is clear from the Figures that the fiber absorber 32 is indeed expanding into and blocking the communicating hole 40.

In other words, there is no first volume defined by the identified faces and plane identified by the Examiner in Iwanaga which discloses the first volume recited in claim 1 of the present application. Claim 1 recites the first volume as being defined by the specific three faces and one plane, and MPEP 2111.01(II) states that “[c]laim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art.” The Applicants respectfully submit that those of ordinary skill in the art would recognize that the three faces and one plane recited in claim 1 would have to meet in order to define the first volume. Iwanaga does not disclose at least this feature of claim 1 of the present application. Further, Iwanaga does not even disclose any similar first volume that is larger than the recited second volume of claim 1 of the present application.

To reiterate, the Applicants do not argue that “Iwanaga does not suggest the claimed first volume because the partition wall (38) extends all the way to the bottom of the cartridge and the absorber (32) is flush against the inner surface of the partition wall (38).” Rather, the Applicants respectfully submit that Kim does not disclose the first volume as defined in claim 1 of the present application, which is the proper test for a §102 rejection. The Applicants do in fact argue that Iwanaga does not disclose a first volume that is larger than the second volume, because it is apparent from the Figures that it does not. It appears that the Examiner has also understood the evidence provided by the Applicants, which shows that Iwanaga does not disclose the recited features of claim 1 of the present application, as being submitted as subject matter of claim 1 itself, but the Applicants respectfully submit that this is not a proper reading of the arguments.

Therefore, Iwanaga does not disclose at least the feature of a first volume which is larger than a second volume, the “first volume being defined by a first face forming an ink contact surface of the negative pressure generating medium adjacent the connection hole, a second face forming a bottom surface of the intermediate partition in the connecting hole, a third face forming a bottom of the ink cartridge, and a first vertical plane extending vertically from a center plane of the intermediate partition.” Accordingly, Iwanaga does not disclose every element of the Applicants' claim 1. Therefore, since Iwanaga does not disclose the features recited in independent claim 1, as stated above, it is respectfully submitted that claim 1 patentably distinguishes over Kim, and withdrawal of the §102(e) rejection is earnestly and respectfully solicited.

Further, the Examiner states that “since the ink cartridge of Iwanaga et al has the structure similar to the structure of the claimed cartridge, the first volume of Iwanaga must anticipate the claimed first volume.” The Applicants respectfully submit that the fact that Iwanaga and the present application disclose ink cartridges of a “similar” structure does not in any way indicate that the first volume of Iwanaga “must” anticipate the claimed first volume. The Applicants also respectfully submit that the very fact that the Examiner has stated that the ink cartridges are “similar” necessarily indicates that there are intrinsic differences between the ink cartridges. Therefore, if there are any differences whatsoever between the ink cartridges, it is not a logical conclusion that a first volume of the ink cartridge of Iwanaga “must” anticipate the recited first volume of claim 1 of the present application.

The Examiner also stated that “Figure 10A of Iwanaga et al shows that the first volume is larger than the second volume.” The Applicants respectfully submit, however, that Figure 10A does not show a first volume larger than a second volume as recited in claim 1 of the present application. Figure 10A clearly shows that the fiber absorber 32 is flush against the partition 38 and the base of the ink cartridge, and therefore there could not be a first volume that is larger than a second volume. As a matter of fact, as the fiber absorber 32 extends into the communicating hole 40 in the Figures of Iwanaga which show a detailed view of the same, the second volume is actually larger than the first volume. Even if the fiber absorber 32 did not extend into the communicating hole 40, the first volume would be at best the same size as the second volume. Although the Examiner has not stated as much explicitly, the Applicants assume that the Examiner intends the atmosphere introducing grooves 51 to provide extra volume that would allow the identified first volume to be larger than the identified second volume. However, the Applicants respectfully submit that the atmosphere introducing grooves 51 are precluded by the recited language of claim 1 of the present application from being included in the first volume. To wit, the top boundary of the first volume recited in claim 1 of the present application is the “second face forming a bottom surface of the intermediate partition in the connecting hole.” As the atmosphere introducing grooves 51 begin and extend upward from the bottom surface of the partition wall 38 in the communicating hole 40, then the atmosphere introducing grooves 51 are outside the defined first volume, and therefore definitely do not provide further volume to the first volume.

As previously stated, the Examiner has not identified the recited elements of claim 15 of the present application in either the previous Office Action or the current Office Action. Nevertheless, the Applicants will address at least some of the deficiencies of Iwanaga regarding claim 15.

Claim 15 of the present application recites "a first volume with an area bounded by a vertical plane extending from a center of a bottom surface of the partition, the bottom surface of the partition on the medium chamber side, a surface of the medium, an exposed portion of a surface of the partition on the medium chamber side, and a base of the ink cartridge on the medium chamber side." Therefore, the first volume recited in claim 15 of the present application is bounded by the precise surfaces and plane recited in claim 15. As discussed in relation to claim 1 of the present application, the Figures of Iwanaga show that there is no volume whatsoever between the bottom surface of the partition and the base of the ink cartridge, nor is there any volume between the fiber absorber 32 and the base of the ink cartridge. Further, the first volume identified by the Examiner is evidently smaller than the identified first volume, which directly contrasts the recited "second volume smaller than the first volume" of claim 15 of the present application. Therefore, it is also respectfully submitted that claim 15 patentably distinguishes over Iwanaga, and withdrawal of the §102(e) rejection is earnestly and respectfully solicited.

Claims 16 and 36 depend from claim 15 and include all of the features of that claim plus additional features which are not taught or suggested by Kim. Therefore, it is respectfully submitted that claims 16 and 36 also patentably distinguish over Kim.

Regarding the §103 rejections listed earlier in this Response, independent claims 1 and 15 of the present application patentably distinguish over Kim, and the deficiencies of Kim in regard to claims 1 and 15 are not cured by Tsukuda and/or Jones. For a proper §103 rejection, the combined references must disclose all of the features of the rejected claims. Therefore, as claims 5-14 and 25-35 depend from independent claims 1 and 15, respectively, and include all of the features of those claims plus additional features which are not taught or suggested by the cited references, it is respectfully submitted that claims 5-14 and 25-35 also patentably distinguish over the cited references.

Summary

There being no further outstanding objections or rejections, it is respectfully submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Serial No. 10/649,933

If there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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